Course Description: Chemistry in the Earth System

In this NGSS aligned chemistry + earth and space science course, students will explore matter, its properties, and its interactions with other matter and energy. Students will then deepen their understanding by applying their knowledge in the context of earth and space science, materials science and environmental science. ESS topics are integrated throughout the course to emphasize patterns and relationships, as well as highlight energy exchange and favorable vs. unfavorable interactions to predict outcomes. Students will begin each learning segment with observable phenomena on the macro-level and then investigate these topics at the micro-scale.

Course Topics

This course will introduce students to the classification of matter, physical and chemical properties, the periodic table and trends, atomic structure, chemical nomenclature, formulas, reactions, stoichiometry, behaviors of gases, kinetics and chemical equilibrium, chemical thermodynamics, properties of solutions, acids and bases, oxidation-reduction reactions, nuclear chemistry and organic chemistry introduction.

Course Expectations

Students will be expected to perform labs / activities and adhere to all proper safety protocols. Student will have approximately 30-45 minutes of homework after each class meeting.

Textbooks / Provided Materials

Basic Chemistry (6th Edition) Timberlake, Pearson 2019

Chemistry in the Earth System (1st Edition) Allan, Biozone 2019

Microsoft Office 365 Suite / OneNote for notes and work completion

Required Materials

Scientific Calculator (TI-30XIIs equivalent or better)

Suggested Materials

Apple or PC tablet with pen feature, or a pen/pad USB plug-in. These devices will increase the student's productivity for organization and work completion.

High Bluff Academy is accredited by the Western Association of Schools and Colleges (WASC). The above course is approved by the University of California system (A-G) and the National Collegiate Athletic Association (NCAA).